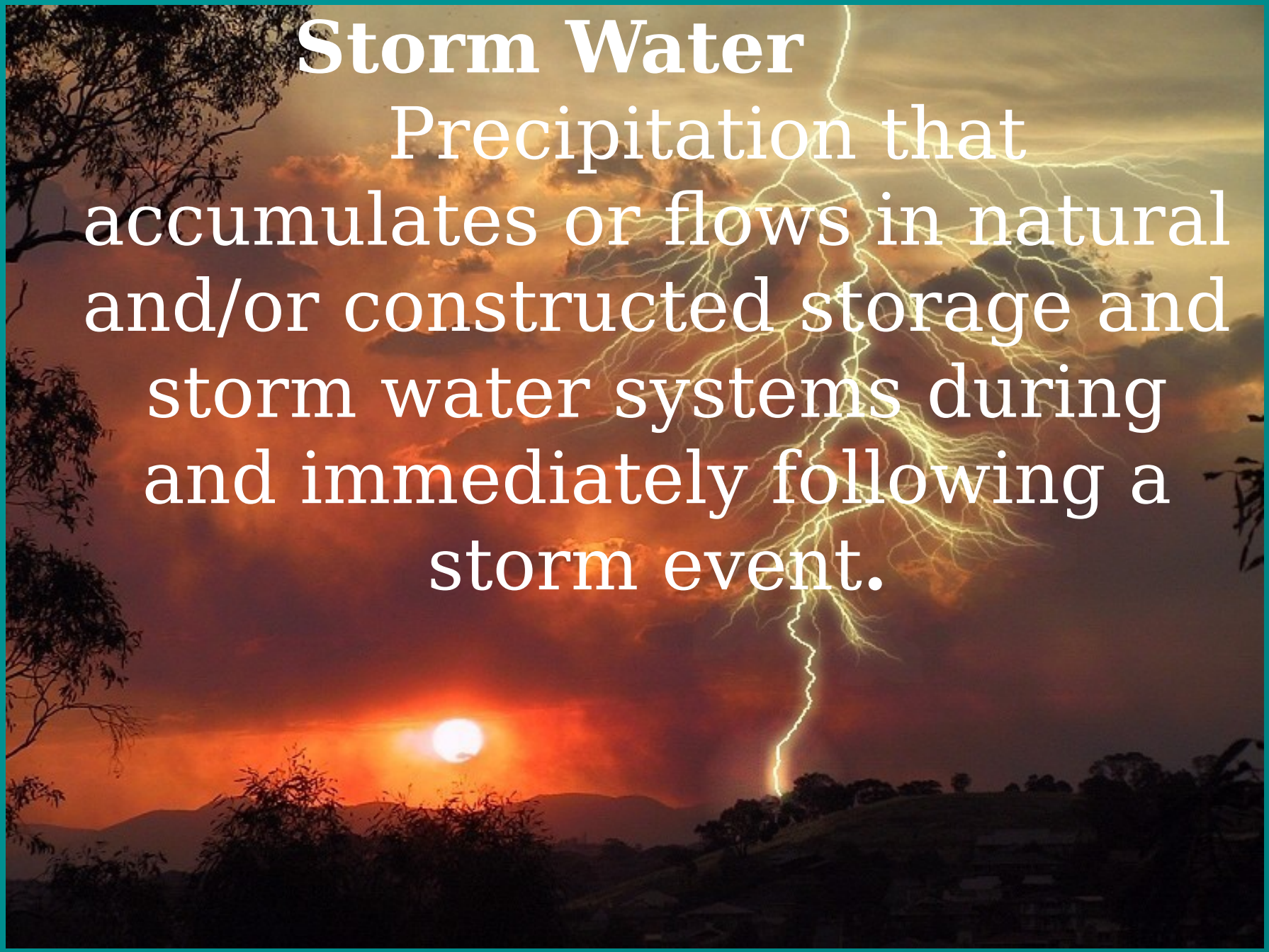
STORM WATER REFRESHER TRAINING

2005

Goals & Objectives

- Provide an overview of storm water regulations.
- Review SWP3 concepts and responsibilities.
- Identify activities that have the potential to affect storm water runoff quality and quantity.



Storm Water

Precipitation that accumulates or flows in natural and/or constructed storage and storm water systems during and immediately following a storm event.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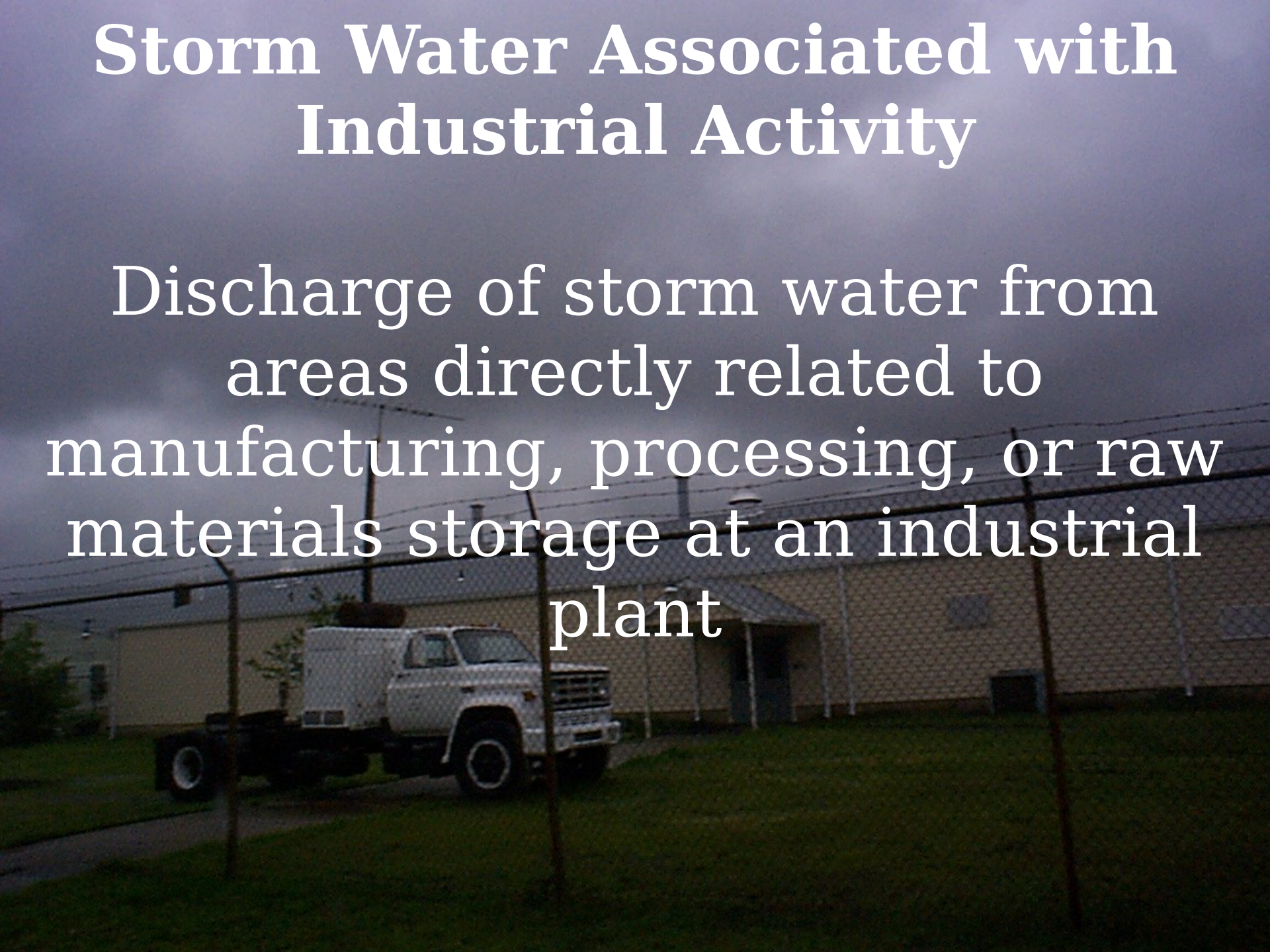
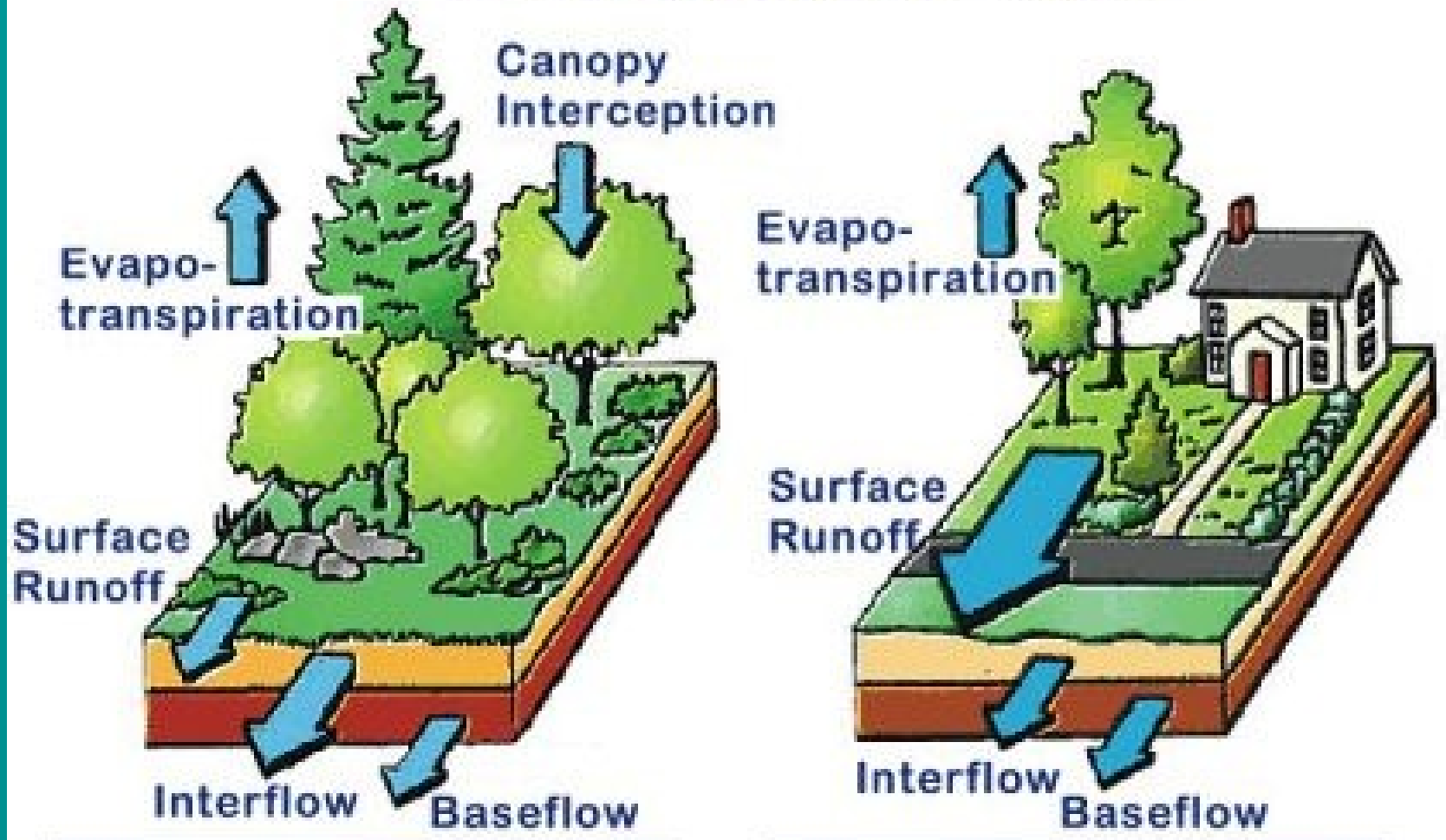
Storm Water Associated with Industrial Activity

Discharge of storm water from areas directly related to manufacturing, processing, or raw materials storage at an industrial plant



Local Hydrologic Cycle



Regulatory Overview

- Federal Water Pollution Control Act of 1972 (Clean Water Act)
- Water Quality Act of 1987
- 1990 Storm Water Phase I Rule
- 1999 Storm Water Phase II Rule

Regulatory Overview

(40 CFR 122.26 “Storm Water Discharges”)

Federal Water Pollution Control Act of 1972

(Clean Water Act)

- Prohibits discharges of pollutants to waters of the U.S. from a point source unless authorized by a permit.
- Original focus was on industrial wastewater and POTWs.

Regulatory Overview

(40 CFR 122.26 “Storm Water Discharges”)

Water Quality Act of 1987

- Studied Runoff (drainage or flood discharge that leaves an area as surface flow or as pipeline flow)
- Mandated SW permits for SW discharges “associated with industrial activity”
- 1990 Storm Water Phase I Rule Promulgated

Regulatory Overview

(40 CFR 122.26 “Storm Water Discharges”)

1990 Storm Water Phase I Rule Regulated:

- Facilities with existing permits
- Facilities engaged in industrial activity
- Municipal storm sewer systems serving >100,000 people
- Facilities violating water quality standards
- Allowed exemptions for ‘no

Regulatory Overview

(40 CFR 122.26 “Storm Water Discharges”)

1999 Storm Water Phase II Rule:

- Expanded the NPDES storm water program to include storm water discharges from:
  - Small municipal storm sewer systems, < 100,000 people
  - Construction sites disturbing 1-5 acres
- Expanded and revised the ‘no exposure’ exclusion to allow

Revisions of 1999 Rule ‘No Exposure’ Exclusion

Revisions of the 1999 ‘No Exposure’ Exclusion Rule

- Allowed industrial facilities found to have ‘No Exposure’ to be removed from NPDES program.
- ‘No Exposure’ provision also allows vehicles awaiting maintenance at vehicle maintenance facilities, that are not leaking contaminants, to be outside and are not considered exposed under this rule.

Regulatory Overview

(40 CFR 122.26 “Storm Water Discharges”)

Affect of Revised Storm Water Regulations on APG

- “No Exposure” industrial facilities can be removed from the SWP3 when certified.
- In 2001, 7 facilities were removed from the SWP3.
- In 2002, 2 facilities were removed.
- No facilities were removed from the SWP3 in 2003.

Storm Water Pollution Prevention Plan (SWP3)

- What is it?
  - Written plan to control and/or eliminate pollutants in storm water discharges
- Objectives
  - Identify potential sources of pollution
  - Develop and describe practices to reduce pollutants in storm water discharges
  - Identify training, management

Storm Water Pollution Prevention Plan (SWP3)

Requirements

- Pollution Prevention Team
- Comprehensive Site Compliance Evaluations
- Development of Best Management Practices
- Special Consideration to Certain Water Priority Chemicals
- Training
- Updates

Generic Best Management Practices (BMPs)

- BMPs are defined as techniques, activities, or structural improvements that help reduce the quantity and improve the quality of stormwater runoff.

Five Generic BMPs

- Preventative Maintenance
- Good Housekeeping
- Spill Prevention and Response Procedures
- Sediment and Erosion Prevention
- Management of Run-off and Run-on

Preventative Maintenance

- Identification and correction of conditions which could cause breakdowns or failures of equipment or operating systems
  - Identify equipment with a potential to pollute
  - Inspect routinely
  - Replace or repair equipment if necessary
  - Maintain inspection & maintenance records

Good Housekeeping

- The practice of maintaining a clean and orderly work environment which will limit the amount of pollutants entering the storm water discharge

ood Housekeeping

- Good housekeeping consists of:
  - Basic Clean-up practices
  - Waste disposal practices
  - Material Storage / Inventory practices
  - Implementation of good housekeeping practices
  - Recordkeeping and documentation

ood Housekeeping

- Basic Clean-up Practices:
  - Sweeping: indoor/outdoor dry material spills or dust accumulation
  - Shoveling: dry material spills or wet solids
  - Vacuuming/pumping system: dry or wet materials
  - Sorbents & gelling agents: liquid clean-up

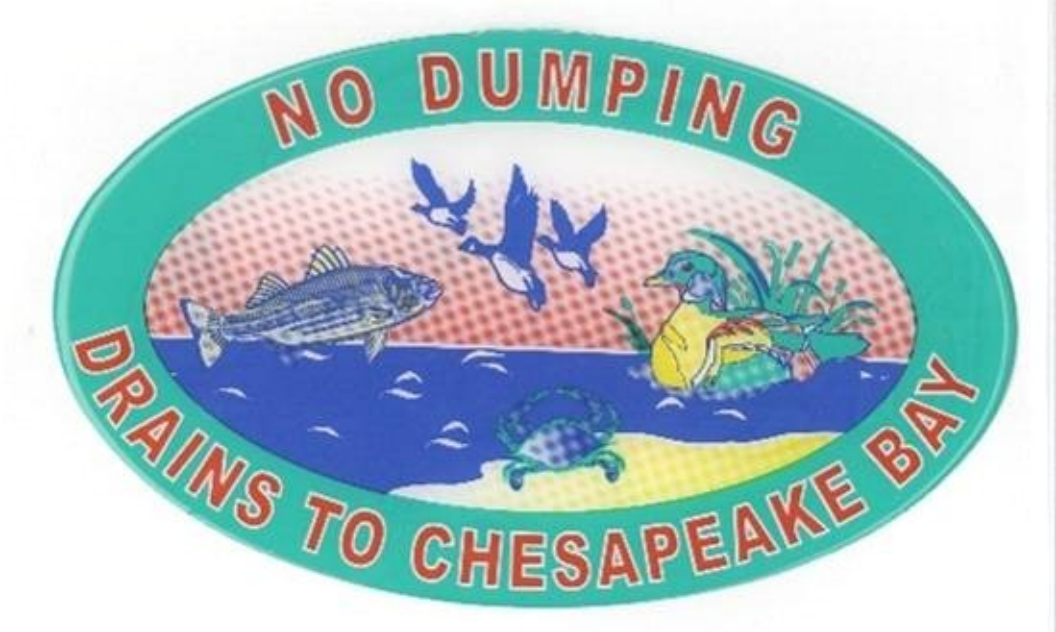
Good Housekeeping

- Waste Disposal Practices
  - Waste to be removed routinely
  - Proper receptacles need to be in place
  - Outdoor receptacles will have lids

Good Housekeeping

If in doubt… Call DSHE Before the use of any drain!

Good Housekeeping



Good Housekeeping

- Material Storage/Inventory Practices
  - Materials will be segregated
  - Containers to be free of leaks, corrosion or other structural defects

Spill Prevention & Response Procedures

- Goal is to identify the potential for spills and highlight the response procedures.
  - Integrated Contingency Plan (ICP): existing spill prevention, control & countermeasures plan
  - Potential spill areas

Spill Procedures, Responsibilities, & Equipment

- Identify a spill response team, responsibilities for response teams, & necessary safety measures
- SOP to notify persons of a spill
- Containment, diversion, isolation, & clean-up SOPs
- Location & availability of spill response equipment

Evaluation of Spill Response

- Spill / evaluation form to be completed within 48 hours after a spill
  - Who, what, where, why, when, & how
- Did the spill reach any water or soil?
- Was any HW generated? Disposal of waste?
- Why did the spill happen?
- **How can this be avoided in the future?**

Sediment & Erosion Prevention

- MDE estimates that 200 - 500 tons per square mile of sediment are deposited from urbanized areas.
- One of three major causes of surface water impairment in MD
- Identification & subsequent prevention or control of erosion & sedimentation can significantly reduce the contamination of surface water
  - **Gunpowder and Bush Rivers are impaired by sediment and nutrients.**

Sediment & Erosion Prevention

- Identify eroded areas & areas with potential for erosion
- Identify measures to limit erosion & sedimentation
- Routinely inspect & evaluate erosion prevention measures
- Repair or replace erosion structural controls
- Recordkeeping & documentation

Identifying Eroded Areas

- Evidence of soil washout
- Soil deposition along storm water flow
- Areas of stressed vegetation
- Turbid storm water run-off
- Filled in or plugged storm water drainage canals or culverts

Measures Used to Control Erosion

- Leave as much vegetation on site as possible
- Minimize the time that soil is exposed
- Prevent run-off from flowing across disturbed areas
- Stabilize disturbed soils
- Minimize “off pavement” vehicle traffic

Measures Used to Control Erosion

- Slow down the run-off flowing across the site
- Provide drainage ways for increased run-off
- Remove sediment from storm water before it leaves the site

Slowing of Run-off

Use of Stone to Prevent Erosion

Use of Hay Bales
To Prevent Runoff

Redirection of Runoff

Management of Run-off

- Identify existing storm water management practices
- Evaluate and modify existing storm water management practices
- Determine & implement necessary storm water management practices
- Maintenance of storm water management practices

Storm Water Management Practices

- Assist in preventing:
  - Accumulation of sediment on paved areas
  - Clouding or discoloration of the water due to sediment or particulates
  - Flooding or accumulation of large puddles after rain fall events
  - Stressed vegetation and/or rutting

WATER'S JOURNEY

THE HIDDEN RIVERS OF FLORIDA